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THE

# Operation of Shortening the Round Ligaments,

WITH TWO CASES.

✓ BY

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## THE OPERATION OF SHORTENING THE ROUND LIGAMENTS, WITH TWO CASES.<sup>1</sup>

BY F. B. HARRINGTON, M.D.

CAROLUS STEPHANUS, an anatomist of the sixteenth century, is said to have discovered the round ligaments of the uterus.

Gray<sup>2</sup> says: "The round ligaments are two rounded cords, between four and five inches in length, situated between the layers of the broad ligament in front of and below the Fallopian tube. Commencing on each side at the superior angle of the uterus, this ligament passes forward and outward through the internal abdominal ring, along the inguinal canal to the labia majora in which it becomes lost. The round ligament consists of areolar tissues, vessels and nerves, besides a dense bundle of fibrous tissue and muscular fibres prolonged from the uterus, inclosed in a duplicature of the peritoneum, which, in the fœtus, is prolonged in the form of a tubular process for a short distance into the inguinal canal."

Rainey<sup>3</sup> believes that the principal function of these ligaments is to draw the uterus towards the symphysis pubis during sexual intercourse, and thus favor the ascent of the semen. He says, "The so-called round ligaments of the uterus, regarded as a muscle, may be said to arise by three fasciculi of tendinous fibres, the inner from the tendon of the internal oblique and the transversalis is near to the symphysis pubis; the middle (fasciculus) from the superior column of the external ring near to its upper part, and the external fasci-

<sup>1</sup> Read before the Suffolk District Medical Society, Surgical Section, April 7, 1886.

<sup>2</sup> Anatomy, Descriptive and Surgical.

<sup>3</sup> On the Structure and Use of the Ligamentum Rotundum Uteri. Lond., Phil., Tr. 1880.

culus from the inferior column of the ring, just above Gimbernat's ligament. From these attachments the fibres pass backwards and outwards, soon becoming fleshy. They then unite in a rounded cord, which passes through in front of the spermatic artery. It then gets between the two layers of the peritoneum, forming the broad ligament, along which it passes backwards, downwards, and inwards to the anterior and superior part of the uterus, into which its fibres, after spreading out a little, may be said to be inserted.

Dr. James A. Adams<sup>4</sup> says, "Besides muscular tissue there is an abundance of fibro-areolar tissue intermixed." Adams believes that the round ligaments are active during parturition, fixing and maintaining the uterus in due relation to the pelvis.

During pregnancy, as is well-known, the round ligaments are much enlarged, and there is an increase of muscular development.

Alquié, a French surgeon, in 1840, proposed and discussed with details the operation of shortening the round ligaments. The proposition was condemned, and attracted little or no favorable attention. There were no operations on living subjects. Aran, Deneffe, Soupart, Burggroeve, Revington, Freund, Schultze, and Adams subsequently proposed the same operation.<sup>5</sup>

Dr. William Alexander, on December 14, 1881, successfully operated on a case of prolapsus uteri by pulling out and shortening the round ligaments. Since that time he has operated upon a large number of cases with good results. Dr. Alexander, although not the originator of the operation, is the surgeon to whom the credit of its first repeated and successful performance is due.

The result of drawing out the round ligaments through the external abdominal rings is to lift the uterus and broad ligament upward and forward. With a

<sup>4</sup> A New Operation for Uterine Displacements. Glasgow Med. Jour., June, 1882.

<sup>5</sup> Doléris. Nouvelles Archives d'Obstétrique et de Gynecologie, January, 1886.



movable uterus this can, almost without exception, be accomplished. Backward displacements and prolapse of the uterus can thus be corrected. What now is needed is the testimony of operators regarding the difficulties, the dangers and the final results of the operation. After considering the statistics, and from a limited personal experience, I should say that the operation was one of great merit in appropriate cases.

I have been able to find reports of one hundred and forty cases by twenty-one operators. Sixteen of these twenty-one operators, who operated upon one hundred and twenty-six of the cases, look upon the operation with favor. Four operators, who have had nine cases, are in doubt as to the value of the operation, or express no opinion. Two operators, who have had five cases, look upon the operation with disfavor because of the difficulties, the dangers, or the poor results.

Three deaths, as the result of the operation, have been reported. One of these occurred in the practice of Dr. Alexander. The patient died with signs of pyæmia, due, he thinks, to a lack of care and cleanliness. Dr. Coe<sup>6</sup> reported an autopsy in which death followed an operation on the round ligaments. There had been sloughing of the round ligaments and pyæmia. There was no peritonitis. A third death occurred in the hands of a Liverpool surgeon, and is referred to by Dr. Alexander as the result of pyæmia.

Dolérís (*loc. cit.*) thinks that Alexander<sup>7</sup> makes too little of the difficulties and dangers of the operation. Mundé failed to find the ligaments in three out of six cases. Alexander has never failed to find them. In one case, a ligament which he could not find was afterwards discovered at a later operation. Dr. Imlach never failed to find the ligaments in thirty-six cases. Alexander, before the British Gynæcological Society,<sup>8</sup> said: "The operation is a delicate one, and quite dif-

<sup>6</sup> American Journal Obstetrics, November, 1885.

<sup>7</sup> "Shortening the Round Ligaments," London, 1884.

<sup>8</sup> British Gynæcological Journal, November, 1885.



ferent from nearly all the ordinary operations. It resembles most ligature of arteries or neurotomies, but from both it differs in many essential particulars. In the ligature of arteries, the pulsation of the vessel guides us to the spot, and assures us that we have reached the structure we seek. In looking for a nerve, we have a characteristic white structure to find, and twitching often shows us when we have found it. The round ligament does not pulsate, and is of a pale flesh color when first seen. It lies imbedded in other tissues, that, by the inexperienced, might easily be mistaken for it. Its white sheen only appears when pulled out."

The control which the ligaments have over the position of the uterus, when not fixed by adhesions or by other means, is demonstrable on any female cadaver. The uterus may be drawn into the position desired, and the shortened ligaments made fast to the tissues about the external ring. If care in the after-treatment be used, it seems to be demonstrated that the shortened ligaments have the power to retain the uterus in its corrected position.

Dr. Alexander reports cases which have stood the test for three and four years. The operation is not without difficulties and dangers, nor is any operation. In the description of the following cases, the writer will endeavor to give an idea of the method of operating.

CASE I. Mrs. W——, twenty-eight years of age, has suffered, since the birth of her child, seven years ago, with backache and dragging pains, which have, at times, incapacitated her for work. The uterus was retroverted and prolapsed in the first degree. For a year and a half she had obtained partial relief by wearing a pessary. Owing to the sensitive condition of the parts, it was necessary to frequently remove the pessary, when the old displacement and suffering would return. Being dependent upon her exertion for support, she became anxious to avoid the repeated loss of time, and the suffering incident to the wearing of

a pessary, and asked to be relieved by operation, if possible. She eagerly accepted the chance for relief which shortening the ligaments afforded. With the assistance of Drs. Strong and Monks, the ligaments were shortened about two and one-half inches. The pubes having been shaved, an incision in a line with Poupart's ligament was made from the spine of the pubes, extending outward from two to two and one-half inches. Having cut through the superficial tissues, the tendon of the external oblique soon appeared. When the tip of the finger was inserted into the wound, the pillars of the ring could be felt near the spine of the pubes. These being exposed, a mass consisting largely of fat was seen filling the canal. This mass was raised upon a director until it could be seized by the fingers. Gentle and interrupted traction brought out various bands adherent to the sides of the canal. These were cut as they appeared. Gradually the mass lost its yellow, fatty character. As more and more was drawn into view, it became larger, round, and glistening white, with here and there a streak of muscular tissue.

The operation was repeated on the other ligament, with a like result. It was found, on examination, that the ligaments controlled the position of the uterus. They were drawn out until the uterus was held in a position in which it was placed by the uterine sound. On each side, the ligament was made fast to the pillars of the ring and to the fascia about the pubes, by means of fine silk sutures. The redundant ligaments were carefully handled and packed in the wounds. Careful antiseptic precautions were observed. The canal was made dry and free from blood. The wounds were closed with catgut, and covered with a tightly-fitting iodoform dressing. The dressings were attached to an elastic band about the body, which ensured close approximation to the wounds.

When the sound was removed from the uterus, a pessary was placed in the vagina to remove all strain



from the ligaments. The recovery from the operation, and the healing of the wounds were perfect.

There was no rise of temperature or of pulse following the operation. On the tenth day the dressings were removed. Complete union had taken place. The patient was kept in bed for three weeks. Six weeks after the operation, the uterus remained in its corrected position.

CASE II. Mrs G——, thirty years of age, has suffered for three years with constant backache and pelvic pain. There was some prolapse of the uterus, and a sharp retroflexion of the body. The uterus measured three and one-fourth inches in depth. The retroflexion could be corrected, but when the repositor was removed, the uterus immediately returned to its old position. Having obtained no relief after many months of treatment, she was advised to try shortening of the round ligaments. With the assistance of Drs. Strong, Elliot, and Vickery, the ligaments were secured, as in the previous operation. The left ligament was much larger than the right, being nearly double its size. When the ligaments were drawn upon, the uterus was lifted, but the retroflexion was wholly uneffected. Following the plan of Alexander, a large stem-pessary was inserted into the uterine canal, which corrected the retroflexion. The ligaments were then shortened two and three-fourths inches, and attached as before. Severe ether-sickness, lasting thirty-six hours, followed, but the recovery was perfect. The dressings were removed on the ninth day. Four weeks after the operation, the position of the uterus was good, and the patient more comfortable than she had been for many months.

It is too early to determine positively the success of the operation in these two cases, but the prognosis is very favorable.





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